First record of *Gobius roulei* (Gobiidae) in the Ligurian Sea

by

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RÉSUMÉ. - Premier signalement de *Gobius roulei* (Gobiidae) en mer Ligure.

Quatre spécimens de *Gobius roulei*, une espèce rare de Méditerranée, ont été capturés dans le golfe de Gênes. Ces spécimens représentent le premier signalement en mer Ligure.

Key words. - Gobiidae - *Gobius roulei* - MED - Ligurian Sea - New record.

The Gobiidae are by far the most specious fish family in the Mediterranean Sea (Quignard and Tomasini, 2000). Although many species are abundant some are still rarely found (Kovacic, 2001; Ahnelt and Dorda, 2004). *Gobius roulei* De Buen, 1928 is such an example of a rare species (Kovačić and Golani, 2006). On 26 and 30 June 1995 a female, 62.0 mm SL and 3 males, 65.4-67.9 mm SL, were collected in the Gulf of Genoa, 500 m east of Cap Noli (Figs 1, 2). These specimens represent the first record of *G. roulei* for the Ligurian Sea and are deposited at the Natural History Museum Vienna (NMW 95210) and in the collection of GBD and GACB.

Meristic and morphometric methods follow Miller (1988); A, anal fin; C, caudal fin; D1, D2, first and second dorsal fins; P, pectoral fin; V, pelvic disc; LL, TR scales in lateral and transversal series. Terminology of the lateral-line system follows Sanzo (1911). Free neuromasts are listed by innervation categories for Gobiidae (Ahnelt and Bohacek, 2004).

DESCRIPTION

Body proportions are given in table I. Anterior nostril short, tubular and with process from posterior rim. Fins: D1 VI, D2 I/13-14, A I/12, P 18, V I/5+5/I, C 14 branched rays. Rays of D1 elongated with middle rays longest and reach, when depressed, to D2 5-7 in males; rear tip of D2 reaching beyond the dorsal origin of C in males; P free rays moderately developed; V complete, with V 5 slightly longer or of similar length than V 4. Scales: body predominantly covered with ctenoid scales; cycloid scales on breast anterior to V and from dorsal origin of P rearwards to origin of D2; few small and deeply embedded cycloid scales anterior to D1; nape and opercle naked; LL 34-35, TR 9. Head with anterior and posterior oculoscapular canals, with pores σ, λ, ϰ, ω, α, β, ϱ, ϱ1 and ϱ2 and with preopercular canal, with pores γ, δ and ε. Rows and, in parentheses, mean of free neuromasts. Innervation by anterior lateral line nerve: supraorbital trunk: *o* (5.3), separated from fellow in dorsal midline; *n* (3.5), *s1* (3), *s2* (2.5). Infraorbital trunk: *r* (3.8), *s3* (3.8), c^2 (7) in 2 rows, c^1 (3.3), c_2 (5.8), c_1 (3.5); 6 transverse suborbital rows, 4 before row *b*, rows *5* and *6* divided in upper (*5s*, *6s*) and lower (*5i*, *6i*) sections by *b*; *1* (11), *2* (6.3), *3* (6), *4* (5.3), *5s* (4.8), *6s* (5.3), *5i* (3), *6i* (5.5) not distinctly extending below level of row *d*; a single neuromast in pore α. Hyomandibular trunk: *b* (9.3), *d* (21.3), *e* (45), *i* (25.3), *f* (3.3), *z* (3.3), *ot* (18.5), *os* (10.3), *oi* (7). Innervation by posterior lateral line nerve: supratemporal ramus: *g* (3.5) anteriorly not reaching *o*, *m* (3), *x1* (8), *x2* (4), *u* (2), *q* (3). Posterior lateral ramus: *h* (7.3), *y* (4.3), *as1* (3.8), *as2* (4.8), *as3* (6), *la2* (1.8), *la3* (2.3).

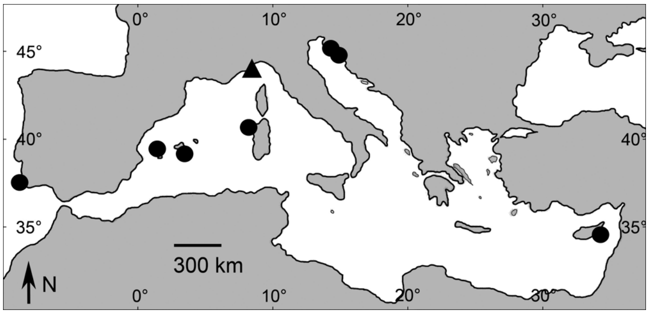

Figure 2. - Map of the Mediterranean Sea showing previous records (full circles) and the new record (triangle) of *Gobius roulei*.

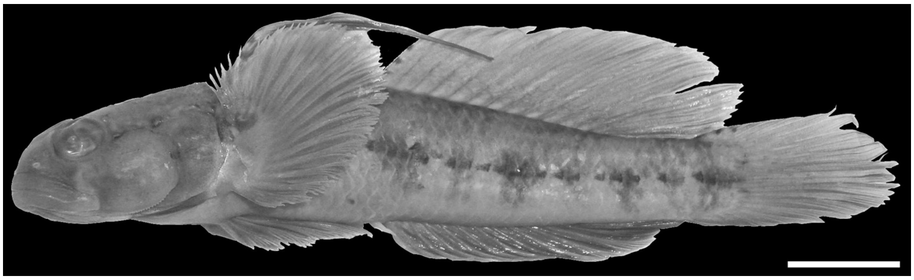

Figure 1. - *Gobius roulei*. Lateral view. NMW 95210, male; Gulf of Genoa. Scale = 10 mm.

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Table I. - Body proportions of *Gobius roulei*. Abbreviations: Ab, length of anal fin base; Ad, Aw, body depth and width at anal fin origin; Cl, caudal fin length; CHd, cheek depth; CP, CPd, caudal peduncle length and depth; D1b, D2b, length of first and second dorsal fin bases; E, eye diameter; H, Hw, head length and width; I, interorbital width; Pl, pectoral fin length; PO, postorbital length; SL, standard length; SN, snout length; SN/A, SN/AN, distance from snout to vertical of anal fin origin and anus; SN/D1, SN/D2, distance from snout to origin of first and second dorsal fins; SN/V, distance from snout to vertical of V I origin; V/AN, distance from origin of V I to anus; Vd, body depth at origin of V I; Vl, pelvic fin length.

	Sex	m	f
	n	3	1
	SL (mm)	65.4 - 67.9	62.0
%SL,	H	26.3-27.0 (26.7 , 0.3)	27.7
	Hw	15.3-15.5 (15.4 , 0.1)	12.9
	SN/D1	32.9-33.7 (33.4 , 0.4)	34.0
	SN/D2	51.8-52.8 (52.4 , 0.5)	53.5
	SN/AN	50.4-51.4 (50.8 , 0.5)	52.9
	SN/A	53.2-55.1 (54.0 , 1.0)	57.6
	SN/V	26.6-29.2 (27.6 , 1.4)	28.1
	CP	19.6-19.9 (19.7 , 0.1)	18.1
	D1b	15.7-16.2 (16.0 , 0.2)	14.5
	D2b	35.2-35.8 (35.5 , 0.3)	34.4
	Ab	27.4-28.1 (27.6 , 0.4)	24.8
	Cl	26.5-27.1 (26.8 , 0.3)	24.0
	Pl	23.4-23.7 (23.5 , 0.2)	25.0
	Vl	24.0-26.8 (25.5 , 1.4)	22.6
	Vd	17.4-18.9 (17.9 , 0.8)	19.2
	Ad	16.2-17.2 (16.8 , 0.5)	15.6
	Aw	14.4-14.6 (14.5 , 0.1)	14.0
	CPd	10.7-11.8 (11.1 , 0.6)	10.2
	V/AN	23.9-25.1 (24.4 , 0.7)	26.6
%CP,	CPd	54.3-59.3 (56.3 , 2.6)	56.3
%H,	SN	27.9-29.1 (28.6 , 0.6)	26.7
	E	31.4-33.3 (32.7 , 1.1)	31.4
	PO	49.4-50.3 (49.9 , 0.4)	45.9
	CHd	21.3-21.7 (21.5 , 0.2)	19.2
	Hw	57.2-58.1 (57.6 , 0.5)	46.5
%E,	I	22.2-23.3 (22.8 , 0.6)	20.4
%V/AN,	Vl	95.3-112.2 (104.5 , 8.6)	84.8

DISCUSSION

In the Mediterranean Sea *G. roulei* was only known from the Balearic Islands, Sardinia, the northern Adriatic Sea and from Cyprus (Kovačić and Golani, 2006). This new record represents the first for the Ligurian Sea and for the Italian mainland. Interestingly, the most recent records (Ahnelt and Dorda, 2004; Kovačić and Golani, 2006; present data) are based on samples from museum collections. This documents that the finding of *G. roulei* in these areas is not linked to a recent range extension.

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